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Notice of Allowability	Application No.	Applicant(s)	
	09/509,089	BRUECKHEIMER ET AL.	
	Examiner	Art Unit	
	Thai D. Hoang	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed on 06/15/2005.
2. ☒ The allowed claim(s) is/are Claims 12-15, 17-47, 49-74, 76-87 and 89-99 have been renumbered as 1-84 respectively.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

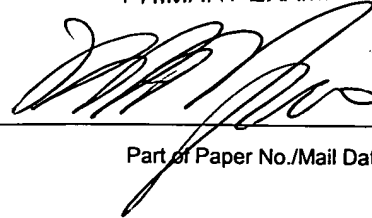
5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 08/09/2003.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

KWANG BIN YAO
PRIMARY EXAMINER



DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William M. Lee, Jr. on 08/19/2005.

The application has been amended as follows:

Claim 12: (currently amended) A method of transporting multi-protocol datagrams over a point to point protocol (PPP) link through an asynchronous transport network, comprising the steps of:

encapsulating multi-protocol datagrams into payloads of asynchronous transport network mini-cells, each mini-cell having a header in addition to a payload, the header including a channel identifier (CID) field;

for each mini-cell, associating a PPP identifier of the datagram being encapsulated therein with the CID field of the mini-cell by inserting a PPP identifier into the CID field of the mini-cell;

assembling said mini-cells into transport packets; and

transporting said packets over said point to point link through the asynchronous transport network.

Claim 16: (Cancelled)

Claim 17: line 1, the statement "claim 16" has been changed to – claim 12--

Claim 44: (currently amended) A method of encapsulating point to point protocol (PPP) datagrams into payloads of asynchronous transport network mini-cells, each mini-cell having a header in addition to a payload, the header including a channel identifier (CID) field, the method comprising the steps of:

encapsulating the PPP datagrams into the payloads of the asynchronous transport network mini-cells;

for each mini-cell, associating a PPP identifier of the datagram being encapsulated therein with the CID field of the mini-cell by inserting a PPP identifier into the CID field of the mini-cell; and

assembling said mini-cells into transport packets.

Claim 48: (Cancelled)

Claim 49: line 1, the statement "claim 48" has been changed to – claim 44--

Claim 74: (currently amended) Apparatus for transporting multi-protocol datagrams over a point to point protocol (PPP) link through an asynchronous transport network, comprising:

encapsulating means [[for]] arranged to encapsulate [[encapsulating]] multi-protocol datagrams into payloads of asynchronous transport network mini-cells, each mini-cell having a header in addition to a payload, the header including a channel identifier (CID) field;

associating means [[for]] arranged to associate [[associating]] a PPP identifier of a datagram being encapsulated into a mini-cell with the CID field of the mini-cell by inserting a PPP identifier into the CID field of the mini-cell;

assembling means [[for]] arranged to assemble [[assembling]] said mini-cells into transport packets; and

transporting means arranged to transport [[transporting]] said packets over said point to point link through the asynchronous transport network.

Claim 75: (Cancelled)

Claim 76: (currently amended) A transport apparatus as claimed in claim 74 [[75]], wherein the associating means [[for associating a PPP identifier with the CID field of a mini-cell]] is arranged to insert only a least significant octet of a two octet PPP identifier into the CID field of a mini-cell.

Claim 77: (currently amended) A transport apparatus as claimed in claim 76, wherein the associating means [[for associating a PPP identifier with the CID field of a mini-cell]] is arranged to insert a most significant octet of the PPP identifier in a first byte of the mini-cell payload adjacent the header and to indicating the presence of said most significant octet in said first byte of the mini-cell payload by making a value of a least significant bit (LSB) of the least significant octet to be "1".

Claim 78: (currently amended) A transport apparatus as claimed in claim 74, wherein the associating means [[for associating a PPP identifier with the CID field of a mini-cell]] is arranged to assign a pre-allocated PPP identifier number to a respective mini-cell CID value and to insert the CID value into the CID field of the mini-cell.

Claim 80: (currently amended) A transport apparatus as claimed in claim 79, wherein it includes scheduling means [[for]] arranged to schedule [[scheduling]] transport of ATM mini-cells of said AAL2 channels according to the type of PPP datagrams encapsulated in the mini-cells being transported in respective AAL2 channels.

Claim 81: (currently amended) A transport apparatus as claimed 79, wherein it includes multiplexing means [[[for multiplexing]]] arranged to multiplex a mini-cells into an ATM virtual channel connection (VCC).

Claim 82: (currently amended) A transport apparatus as claimed in claim 81, wherein said multiplexing means [[[for multiplexing mini-cells into an ATM virtual channel connection (VCC)]]] is arranged to multiplex mini-cells encapsulating PPP datagrams and mini-cells encapsulating non-PPP datagrams into the ATM VCC.

Claim 83: (currently amended) A transport apparatus as claimed in claim 79, wherein the encapsulating means [[[for encapsulating datagrams into mini-cells]]] is arranged to encapsulate datagrams comprising delay sensitive traffic into mini-cells comprising a first channel of an ATM virtual circuit (VC) and encapsulate datagrams comprising delay insensitive traffic into mini-cells comprising a second channel of said ATM VC.

Claim 84: (currently amended) A transport apparatus as claimed in claim 79, wherein said assembling means [[[for assembling mini-cells into transport packets]]] is arranged to assemble mini-cells into ATM packets.

Claim 85: (currently amended) A transport apparatus as claimed in claim 79, wherein said assembling means [[[for assembling mini-cells into transport packets]]] is arranged to assemble mini-cells directly into MPEG-TS frames.

Claim 86: (currently amended) A transport apparatus as claimed in claim 79, wherein said assembling means [[for assembling mini-cells into transport packets]] is arranged to assemble mini-cells directly into TDMA time slots.

Claim 87: (currently amended) Apparatus for encapsulating point to point protocol (PPP) datagrams into payloads of asynchronous transport network mini-cells, each mini-cell having a header in addition to a payload, the header including a channel identifier (CID) field, the apparatus comprising:

encapsulating means [[for encapsulating]] arranged to encapsulate the PPP datagrams into the payloads of the asynchronous transport network mini-cells;

associating means [[for associating]] arranged to associate a PPP identifier of a datagram being encapsulated into a mini-cell with the CID field of the mini-cell by inserting a PPP identifier into the CID field of the mini-cell; and

assembling means [[for assembling]] arranged to assemble said mini-cells into transport packets.

Claim 88: (Cancelled).

Claim 89: (currently amended) An apparatus as claimed in claim 87, wherein the associating means [[for associating a PPP identifier with the CID field of a mini-cell]] is arranged to insert only a least significant octet of a two octet PPP identifier into the CID field of a mini-cell.

Claim 90: (currently amended) An apparatus as claimed in claim 89, wherein the associating means [[for associating a PPP identifier with the CID field of a mini-cell]] is arranged to insert a most significant octet of the PPP identifier in a first byte of the mini-

cell payload adjacent the header and to indicating the presence of said most significant octet in said first byte of the mini-cell payload by making a value of a least significant bit (LSB) of the least significant octet to be "1".

Claim 91: (currently amended) An apparatus as claimed in claim 87, wherein the associating means [[for associating a PPP identifier with the CID field of a mini-cell]] is arranged to assign a pre-allocated PPP identifier number to a respective mini-cell CID value and to insert the CID value into the CID field of the mini-cell.

Claim 93: (currently amended) An apparatus as claimed in claim 92, wherein it includes scheduling means [[for scheduling]] arranged to schedule transport of ATM mini-cells of said AAL2 channels according to the type of PPP datagrams encapsulated in the mini-cells being transported in respective AAL2 channels.

Claim 94: (currently amended) An apparatus as claimed 92, wherein it includes multiplexing means [[for multiplexing]] arranged to multiplex mini-cells into an ATM virtual channel connection (VCC).

Claim 95: (currently amended) An apparatus as claimed in claim 94, wherein said multiplexing means [[for multiplexing mini-cells into an ATM virtual channel connection (VCC)]] is arranged to multiplex mini-cells encapsulating PPP datagrams and mini-cells encapsulating non-PPP datagrams into the ATM VCC.

Claim 96: (currently amended) An apparatus as claimed in claim 92, wherein the encapsulating means [[for encapsulating datagrams into mini-cells]] is arranged to encapsulate datagrams comprising delay sensitive traffic into mini-cells comprising a

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first channel of an ATM virtual circuit (VC) and encapsulate datagrams comprising delay insensitive traffic into mini-cells comprising a second channel of said ATM VC.

Claim 97: (currently amended) An apparatus as claimed in claim 92, wherein said assembling means [[for assembling mini-cells into transport packets]] is arranged to assemble mini-cells into ATM packets.

Claim 98: (currently amended) An apparatus as claimed in claim 92, wherein said assembling means [[for assembling mini-cells into transport packets]] is arranged to assemble mini-cells directly into MPEG-TS frames.

Claim 99: (currently amended) An apparatus as claimed in claim 92, wherein said assembling means [[for assembling mini-cells into transport packets]] is arranged to assemble mini-cells directly into TDMA time slots.

Allowable Subject Matter

Claims 12-15, 17-47, 49-74, 76-87 and 89-99 have been renumbered as 1-84 respectively.

Claims 1-84 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Westberg, US Patent No. 6,041,054 discloses a method and system called "Efficient transport of internet protocol packets using asynchronous transfer mode adaptation layer two." Westberg does not teach or fairly suggest the following features, which are recited in each independent claim of the present application:

A method of transporting multi-protocol datagrams over a point to point protocol (PPP) link through an asynchronous transport network, comprising the steps of:

encapsulating multi-protocol datagrams into payloads of asynchronous transport network mini-cells, each mini-cell having a header including a channel identifier (CID) field;

for each mini-cell, associating a PPP identifier of the datagram being encapsulated therein with the CID field of the mini-cell by inserting a PPP identifier into the CID field of the mini-cell as recited in independent claims 1, 32, 61 and 73.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D. Hoang whose telephone number is (571) 272-3184. The examiner can normally be reached on Monday-Friday 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KWANG BIN YAO
PRIMARY EXAMINER

Thai Hoang

A handwritten signature in black ink, appearing to read 'Kwang Bin Yao', is written over the printed name and title.